What is claimed is:

1. A method of forming a structured surface on an extruded film, the method comprising:

providing a tool roll comprising a cylindrical base roll, at least a first wire wound in helical coils around the base roll, and optionally a second wire wound in helical coils around the base roll, wherein the helical coils of the wires form a structured surface;

extruding a molten thermoplastic material onto the outer surface of the tool roll to form a structured surface on the film formed on the tool roll, using the outer surface of the tool roll, the thermoplastic material at least partially filling at least a portion of the structural surface formed by at least the first wires to form the film structured surface; and

removing the structured film surface from the tool roll.

2. The method of claim 1 wherein the thermoplastic material is extruded into a nip formed between the tool roll and a backup roll.

3. The method of claim 2 wherein the backup roll is a further tool roll.

4. The method of claim 2 wherein a vacuum is used to assist in removal of air from the tool roll.

5. The method of claim 2 wherein one or both of the tool roll or backup roll is heated to assist in flow of the thermoplastic material.

6. The method of claim 1 wherein at least one wire has a varying cross-section along its length so as to create at least in part the tool roll structured surface.

7. The method of claim 1 wherein there is at least one second wire and the height of one wire is less than that of an adjacent wire over a width of the roll forming a helical groove tool roll structured surface such that the structured film surface formed by the tool roll comprises a series of ridge structures.

8. The method of claim 7 wherein the ridge structures are discontinuous.

9. The method of claim 7 wherein the ridge structures are continuous.

10. The method of claim 2 wherein at least a first wire has a plurality of first voids in the first wire so as to form a plurality of first cavities, each cavity of the plurality of first cavities comprising an opening at an outer surface of the tool roll.

11. The method of claim 10 wherein the first wire comprises an inner edge and an outer edge, and further wherein the distance between the inner edge of the first wire and a bottom of each cavity in the plurality of first cavities is substantially constant.

12. The method of claim 10 further comprising a metal plating in the plurality of first cavities.

13. The method of claim 12 wherein the metal plating is located on the outer surface of the tool roll.

14. The method of claim 10 wherein at least some of the first cavities in the plurality of first cavities comprise rectilinear tangential cross-sections.

15. The method of claim 10 wherein at least some of the first cavities in the plurality of first cavities comprise substantially constant tangential cross-sectional areas.

16. The method of claim 10 wherein each cavity in the plurality of first cavities comprises a tangential cross-sectional area proximate a bottom of the cavity that is larger than the tangential cross-sectional area at the opening of the cavity.

17. The method of claim 10 wherein each cavity in the plurality of first cavities comprises a tangential cross-sectional area at the opening of the cavity that is larger than the tangential cross-sectional area proximate a bottom of the cavity.

18. The method of claim 10 wherein each cavity in the plurality of first cavities comprises a tangential cross-sectional area at the opening of the cavity that is smaller than the tangential cross-sectional area of the cavity at some point between the opening of the cavity and the base roll.

19. The method of claim 10 wherein the depth of each cavity in the plurality of first cavities is substantially constant.

20. The method of claim 10 wherein at least some of the cavities in the plurality of cavities have a bottom that is distinct from an end of the at least some cavities.

21. The method of claim 10 wherein at least one area of the outer surface of the tool roll is substantially free of cavities.

22. The method of claim 10 wherein a substantially cylindrical section of the outer surface of the tool roll is substantially free of cavities.

23. The method of claim 10 wherein a substantially longitudinal section of the outer surface of the tool roll is substantially free of cavities

24. The method of claim 10 further comprising a second wire wound around the base roll, wherein the second wire is located between adjacent helical coils of the first wire.

25. The method of claim 24 wherein each of the first cavities is bounded on two sides by the second wire.

26. The method of claim 24 wherein the second wire comprises an outer edge and further wherein the outer edge of the second wire is even with the outer edge of the first wire.

27. The method of claim 24 wherein the second wire comprises a substantially uniform cross-section.

28. The method of claim 24 wherein the second wire comprises a plurality of second voids formed therein, the plurality of second voids in the second wire forming a plurality of second cavities, each second cavity of the plurality of second cavities comprising an opening at an outer surface of the tool roll.

29. The method of claim 28 wherein each of the first cavities is bounded on two sides by the second wire, and further wherein each of the second cavities is bounded on two sides by the first wire.

30. A method of forming a mechanical fastener comprising:

providing a roll tool having a plurality of cavities having generally rectilinear tangential cross-sectional areas along at least a part of the depth of the cavity;

extruding a molten thermoplastic material onto the outer surface of the tool roll to form high aspect ratio protrusions on the film formed on the tool roll, using the outer surface of the tool roll, the thermoplastic material at least partially filling the tool roll cavities;

removing the structured film from the tool roll, and

forming a mechanical fastener by modifying the protrusions.

31. The method of claim 30 wherein the tool roll is provided by a cylindrical base roll and at least a first wire comprising a plurality of first voids formed therein, the at least one first wire being wound in helical coils around the base roll, wherein the plurality of first voids in the first wire form the plurality of first cavities each cavity of the plurality of first cavities comprising an opening at an outer surface of the tool roll.

32. The method of claim 30 wherein the cavities have aspect ratio of at least 1:1, and a height of 0.1 mm or more.

33. The method of claim 30 wherein the cavities have aspect ratio of at least 2:1 and a height of 0.2 mm or more.

34. The method of claim 33 wherein the protrusions have a height of 0.4 mm or more.

35. The method of claim 30 wherein the thermoplastic material is extruded into a nip formed between the tool roll and a backup roll.

36. The method of claim 35 wherein the backup roll is a further tool roll.

37. The method of claim 35 wherein a vacuum is used to assist in removal of air from the tool roll.

38. The method of claim 35 wherein one or both of the tool roll or backup roll is heated to assist in flow of the thermoplastic material.

39. The method of claim 31 wherein at least one wire has a varying cross-section along its length so as to create at least in part the tool roll structured surface.

40. The method of claim 31 wherein the first wire comprises an inner edge and an outer edge, and further wherein the distance between the inner edge of the first wire and a bottom of each cavity in the plurality of first cavities is substantially constant.

41. The method of claim 31 further comprising a metal plating in the plurality of first cavities.

42. The method of claim 41 wherein the metal plating is located on the outer surface of the tool roll.

43. The method of claim 30 wherein at least some of the first cavities in the plurality of first cavities comprise substantially constant tangential cross-sectional areas.

44. The method of claim 30 wherein each cavity in the plurality of first cavities comprises a tangential cross-sectional area proximate a bottom of the cavity that is larger than the tangential cross-sectional area at the opening of the cavity.

45. The method of claim 30 wherein each cavity in the plurality of first cavities comprises a tangential cross-sectional area at the opening of the cavity that is larger than the tangential cross-sectional area proximate a bottom of the cavity.

46. The method of claim 30 wherein each cavity in the plurality of first cavities comprises a tangential cross-sectional area at the opening of the cavity that is smaller than the tangential cross-sectional area of the cavity at some point between the opening of the cavity and the base roll.

47. The method of claim 30 wherein the depth of each cavity in the plurality of first cavities is substantially constant.

48. The method of claim 30 wherein at least some of the cavities of the plurality of cavities have a bottom that is distinct from an end of the cavity.

49. The method of claim 30 wherein at least one area of the outer surface of the tool roll is substantially free of cavities.

50. The method of claim 30 wherein a substantially cylindrical section of the outer surface of the tool roll is substantially free of cavities.

51. The method of claim 30 wherein a substantially longitudinal section of the outer surface of the tool roll is substantially free of cavities

52. The method of claim 30 further comprising a second wire wound around the base roll, wherein the second wire is located between adjacent helical coils of the first wire.

53. The method of claim 52 wherein each of the first cavities is bounded on two sides by the second wire.

54. The method of claim 52 wherein the second wire comprises an outer edge and further wherein the outer edge of the second wire is even with the outer edge of the first wire.

55. The method of claim 52 wherein the second wire comprises a substantially uniform cross-section.

56. The method of claim 52 wherein the second wire comprises a plurality of second voids formed therein, the plurality of second voids in the second wire forming a plurality of second cavities, each second cavity of the plurality of second cavities comprising an opening at an outer surface of the tool roll.

57. The method of claim 56 wherein each of the first cavities is bounded on two sides by the second wire, and further wherein each of the second cavities is bounded on two sides by the first wire.